



STIC Search Report

EIC 2800

STIC Database Tracking Number: 154039

TO: Erik Kielin
Location: JEF-7D25
Art Unit : 2813
Tuesday, June 07, 2005

From: Jeff Harrison
Location: EIC 2800
JEF-4B68
Phone: 22511

Case Serial Number: 10/696,060

Search Notes

Re: Iridium with structures of phenylpyridine

Please find attached the search history and the best of the edited search results from Chemical Abstracts and CA Registry file.

See the two tagged items, which are the closest I found. The structures are OK, but they both lack the fluorine.

If you would like more searching on this case, or if you have questions or comments, please let me know.

Respectfully,
Jeff Harrison

A handwritten signature in black ink that appears to read "Jeff".

CAS/STN FILE 'REGISTRY' ENTERED AT 10:23:17 ON 07 JUN 2005

L1 1 S QUINOLINE/CN
L2 1 S 2-BENZAZINE/CN
L3 1 S ISOQUINOLINE/CN
L4 17744 S 591.50.52/RID AND (BENZENE OR PHENYL)
L5 1 S PHENYLISOQUINOLINE/CN
L6 22305 S 591.50.52/RID AND 46.150.18/RID
L7 233038 S (PHEN##### OR BENZ#####)(4A) (ISOQUINOLIN?
 OR QUINOLIN? OR BENZAZIN? OR BENZOPYRIDI? OR AZANAPHTHALEN?)
L8 9888 S L6 AND L7
L9 4610 S L8 AND (3 OR 9)/NR
L10 560 S L9 AND F/ELS
L11 502 S L9 AND (FLUOROPHEN? OR FLUOROBENZ? OR TRIFLUOR? OR FLUOROMETH?)
L12 0 S (L10 OR L11) AND (IR/ELS OR IRIDIUM)
L13 26761 S (L4 OR L5 OR L6 OR L7) AND (FLUOROPHEN? OR FLUOROBENZ? OR TRIFLUOR? OR FLUOROMETH?)
L14 41 S L13 AND (IR OR IRIDIUM)
L15 18 S L14 AND TRIS
L16 39 S L14 AND KAPPA
L17 18 S L15 AND TRI FLUOR?
L18 18 S L15 AND TRI FLUOR?
L19 18 S L15 AND FLUOROMETH?
L20 36 S L14 AND FLUOROMETH?
L21 40 S L14 AND TRI FLUOR?
L22 40 S L14 AND TRIFLUOR?
L23 36 S L20 AND (L21 OR L22)
L24 18 S (L17 OR L18 OR L19)
L25 36 S (L23 OR L24)
L26 4638 S (L4 OR L5 OR L6 OR L7 OR L8 OR L9 OR L10
 OR L11 OR L12 OR L13) AND (BIFLUOR? OR DIFLUOR? OR (DI OR BI OR BIS) (1A) FLUOR?)
L27 4638 S (L6 OR L7) AND L26
L28 43 S L27 AND IR/ELS
L29 41 S L27 AND IRIDIUM
L30 43 S (L28 OR L29)
L31 37 S L30 NOT L25
L32 245454 S (L1 OR L2 OR L3 OR L4 OR L5 OR L6 OR L7 OR L8 OR L9 OR L10 OR L11 OR L12 OR L13 OR L14 OR L15
OR L16 OR L17 OR L18 OR L19 OR L20 OR L21 OR L22 OR L23 OR L24 OR L25 OR L26 OR L27 OR L28 OR L29 OR L30 OR L31)
NOT (L30 OR L25)
L33 245382 S L32 AND (L6 OR L7)
L34 33856 S L33 AND F/ELS
L35 128 S L34 AND IR/ELS
L36 128 S L35 NOT 2005?/ED
L37 121 S L35 NOT 2004?/ED
L38 99 S L35 NOT 2003?/ED
L39 104 S L35 NOT 2002?/ED
L40 68 S L35 AND L36 AND L37 AND L38 AND L39
L41 68 S L40 NOT (L30 OR L25)
L42 100 S 435294?/RN
L43 84 S L42 AND IR/ELS
L44 42 S L43 AND TRIS
L45 31 S L44 AND F/ELS
L46 29 S L45 AND (L6 OR L7)

FILE 'HCAPLUS' ENTERED

L47 3 S L46

FILE 'REGISTRY' ENTERED

L48 1 S PHENYL PYRIDINE/CN
L49 1 S 1-PHENYL PYRIDINIUM/CN
L50 2 S 2-PHENYL PYRIDINE/CN OR "2-PHENYL PYRIDINE
L51 17 S 1008-89-5/CRN
L52 2 S 52642-16-7/CRN
L53 1 S 52642-16-7/RN
L54 1 S 1008-89-5/RN
L55 1 S QUINOLINE/CN
L56 657253 S 591.79.52/RID OR QUINOLIN? OR AZANAPHTHALEN? OR BENZAZIN? OR BENZOPYRIDIN? OR
BENZO(1W)PYRIDIN?
L57 1293875 S 46.156.30/RID OR PYRIDIN###(2A) PHENYL? OR PHENYL PYRIDIN?
L58 30719 S L56 AND L57
L59 11739 S L58 AND PHENYL?
L60 1034 S L58 AND BENZEN?
L61 14183 S 46.150.18/RID AND L58
L62 14212 S (L59 OR L60 OR L61)
L63 4195 S L58 AND O/ELS AND F/ELS
L64 12 S L62 AND IR/ELS
L65 0 S L63 AND IR/ELS
L66 0 S (L51 OR L52 OR L53 OR L54) AND IR/ELS
L67 14212 S (L59 OR L60 OR L61) AND ((L51 OR L52 OR L53 OR L54 OR L55) OR (L56 AND L57))
L68 13293 S L67 AND O/ELS

FILE 'REGISTRY' ENTERED
L69 2282 S L68 AND F/ELS
L70 0 S L69 AND IR/ELS

FILE 'HCAPLUS' ENTERED
L71 0 S L69(L)(IRIDIUM OR IR)
L72 5 S L69 AND (IRIDIUM OR IR)
L73 3 S L69 AND M(3A)METAL#####
L74 8 S (L72 OR L73)
L75 124 S (L51 OR L52 OR L53 OR L54 OR L55)(L)(IR OR IRIDIUM)
L76 44 S (L51 OR L52 OR L53 OR L54 OR L55)(L)(IRIDIUM)
L77 110 S (L51 OR L52 OR L53 OR L54 OR L55) AND ((M OR METAL#####)(3A)IR OR IRIDIUM)
L78 9 S L64

FILE 'REGISTRY' ENTERED
L79 640955 S (L51 OR L52 OR L53 OR L54 OR L55 OR L56 OR
L57 OR L58 OR L59 OR L60 OR L61 OR L62 OR L63 OR L64 OR L65 OR
L66 OR L67 OR L68 OR L69 OR L70) AND QUINOLIN?
L80 7 S L79 AND PHENYL PYRIDIN?
L81 54 S L79 AND PHENYL PYRIDIN?
L82 7 S L79 AND (AZANAPHTHALEN? OR BENZAZIN? OR
BENZOPYRIDIN? OR BENZO(1W)PYRIDIN?)
L83 640955 S L79 AND QUINOLIN?
L84 3579 S L83 AND PYRIDIN?(2A)PHENYL?
L85 0 S L84 AND F/ELS AND O/ELS AND IR/ELS
L86 413 S L84 AND F/ELS AND O/ELS

FILE 'HCAPLUS' ENTERED
L87 17 S L78 OR L74
L88 10 S (L80 OR L81 OR L82) AND L86
L89 10 S L88 NOT L87
L90 146 S ?QUINOLIN?(8A)PHENYL PYRIDIN?
L91 32 S ?QUINOLIN?(8A)PHENYL PYRIDIN?
L92 65 S (L90 OR L91) AND (F OR ?FLUOR?)
L93 0 S L92 AND (M(4A)(METAL##### OR IR))
L94 6 S L92 AND IRIDI?
L95 36 S L92 AND TRIFLUOR?
L96 32 S L92 AND TRIFLUOROMETH?
L97 32 S L92 AND (O OR OXYGEN OR OXO OR OXY)

FILE 'REGISTRY' ENTERED
L98 2733 S (L51 OR L52 OR L53 OR L54 OR L55 OR L56 OR
L57 OR L58 OR L59 OR L60 OR L61 OR L62 OR L63 OR L64 OR L65 OR
L66 OR L67 OR L68 OR L69 OR L70) AND IR/ELS
L99 272896 S (L51 OR L52 OR L53 OR L54 OR L55 OR L56 OR
L57 OR L58 OR L59 OR L60 OR L61 OR L62 OR L63 OR L64 OR L65 OR
L66 OR L67 OR L68 OR L69 OR L70) AND O/ELS AND N/ELS AND F/ELS
L100 183028 S L99 AND ?PYRIDIN?
L101 183028 S L99 AND PYRIDIN?
L102 71394 S L101 AND TRIFLUOROMETH?

FILE 'HCAPLUS' ENTERED
L103 45 S (L87 OR L88 OR L89 OR L90 OR L91 OR L92 OR
L93 OR L94 OR L95 OR L96 OR L97) AND (L98 OR L102)
L104 27 S L87 OR L89
L105 25 S L103 NOT L104
L106 11 S L105 AND 2002-2005/PRY,PY
L107 14 S L105 NOT L106
L108 14 S L105 AND 1990-2001/PRY,PY
L109 19 S L107 OR L108

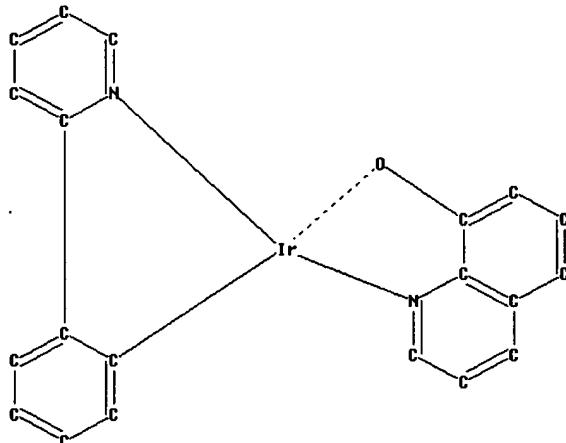
FILE 'REGISTRY' ENTERED
L110 17738 S 591.79.52/RID AND 46.156.30/RID
L111 44 S L110 AND (OXYQUIN? OR OXOQUIN?)
L112 4872 S L110 AND (OXY OR OXO)(4A)QUINOLIN?
L113 434 S L110 AND FLUOROPHENYL?
L114 479 S L110 AND BIS
L115 33 S L110 AND TRIS
L116 834 S L110 AND FLUOROMETH?
L117 17 S L113 AND L114
L118 0 S L113 AND L115
L119 8 S L113 AND L116
L120 58 S L114 AND L116
L121 58 S L114 AND L116
L122 158 S L111 OR L115 OR (L117 OR L118 OR L119 OR L120 OR L121)
L123 0 S L122 AND IR/ELS

FILE 'HCAPLUS' ENTERED

L124 1 S L122 AND IRIDIUM
 L125 0 S L122 AND (M OR METAL####) (3A) IR
 L126 1 S L122 AND (M(3A)METAL####)
 L127 1 S L122 AND IRIDIUM
 L128 61 S L122 AND ?PYRIDIN?
 L129 67 S L122 AND ?QUINOLIN?
 L130 42 S (L128 OR L129) AND (BIS OR TRIS OR
 BIDENT? OR TRIDENT? OR TRI OR BI OR DI)
 L131 54 S L128 AND L129
 L132 35 S L122 AND ?QUINOLIN?(6A) ?PYRIDIN?
 L133 46 S L109 OR L104
 L134 71 S (L124 OR L125 OR L126 OR L127 OR L128 OR
 L129 OR L130 OR L131 OR L132) NOT L133
 L135 29 S L134 AND 2002-2005/PRY,PY
 L136 42 S L134 NOT L135
 L137 52 S L134 AND 1988-2001/PRY,PY
 L138 58 S L136 OR L137
 L139 1 S L138 AND IRIDIUM
 L140 25 S L138 AND L132
 L141 26 S (L139 OR L140)
 L142 32 S L138 NOT L141
 L143 22 S L142 AND (F OR ?FLUOR?) (10A) (?PYRIDIN? OR ?QUINOLIN?)
 L144 0 S L142 AND IR

FILE 'REGISTRY' ENTERED

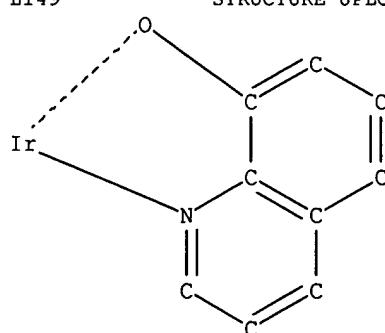
L145 STRUCTURE uploaded



L146 0 SEA SSS SAM L145

FILE 'CAPLUS, MARPAT, MARPATPREV, REGISTRY' ENTERED

L147 0 SEA SSS SAM L145
 L148 0 SEA SSS SAM L145
 L149 STRUCTURE uploaded



L150 5 SEA SSS SAM L149
 L151 0 SEA SSS SAM L149
 L152 56 SEA SSS FUL L149
 L153 0 SEA SSS FUL L149
 L154 0 SEA SSS FUL L149

FILE 'CAPLUS, MARPAT, MARPATPREV, REGISTRY' ENTERED
L155 26 S L152
 SET DUPORDER FILE
L156 26 DUP REM L154 L153 L155 (0 DUPLICATES REMOVED)
 ANSWERS '1-26' FROM FILE CAPLUS

FILE 'REGISTRY' ENTERED
L157 1 S L152 AND (46.156.30/RID OR PHENYL PYRIDIN? OR PYRIDIN? (2A) PHENYL?)

FILE 'HCAPLUS' ENTERED
L158 1 S L157

FILE 'REGISTRY' ENTERED
L159 2 S L152 AND F/ELS

FILE 'HCAPLUS' ENTERED
L160 1 S L159

FILE 'STNGUIDE' ENTERED

FILE 'CAPLUS' ENTERED
L161 24 S L155 NOT (L157 OR L159)

FILE 'REGISTRY' ENTERED
L162 1 S TRIPHENYLPHOSPHINE/CN
L163 409 S 603-35-0/CRN
L164 57 S TRIS AND 3 5 AND BIS AND TRIFLUOROMETH? AND PHENYLPHOSPH?
L165 17 S TRIS 3 5 AND L164
L166 6 S L165 AND BIS TRIFLUOR?
L167 42 S 2 6 DIMETHYL AND PHENYL AND ISOCYANIDE
L168 42 S 2 6 DIMETHYL? AND L167
L169 1 S 3 TRIFLUOR? AND METHYLPHENYL? AND ISOCYANID
L170 2 S 4 TOLUEN? AND SULFON? AND METHYL AND ISOCYANIDE
L171 0 S L162 AND (46.156.30/RID OR PHENYL PYRIDIN? OR PYRIDIN? (2A) PHENYL?)
L172 0 S L162 AND (46.156.30/RID OR PYRIDIN?)

L78 ANSWER 6 OF 9 HCAPLUS COPYRIGHT ACS on STN

AN 2002:427663 HCAPLUS

DN 137:26174

ED Entered STN: 07 Jun 2002

TI Metal coordination compound, luminescence device and display apparatus
IN Tsuboyama, Akira; Mizutani, Hidemasa; Okada, Shinjiro; Takiguchi, Takao;
Miura, Seishi; Noguchi, Koji; Moriyama, Takashi; Igawa, Satoshi; Kamatani,
Jun; Furugori, Manabu

PA Canon Kabushiki Kaisha, Japan

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1211257	A2	20020605	EP 2001-128237	20011128
	EP 1211257	A3	20031029		
	JP 2003081989	A2	20030319	JP 2001-354703	20011120
	US 2003054198	A1	20030320	US 2001-995608	20011129
	CN 1364847	A	20020821	CN 2001-138389	20011130
PRAI	JP 2000-367080	A	20001201		
	JP 2001-198439	A	20010629		
	JP 2001-354703	A	20011120		

OS MARPAT 137:26174

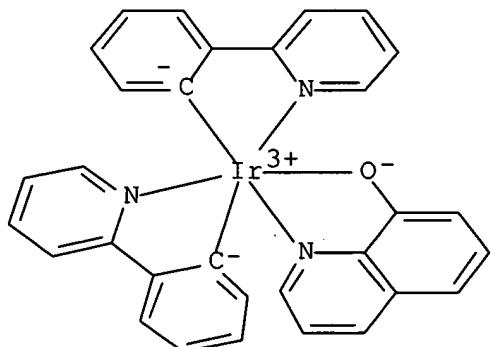
AB The present invention relates to a metal coordination compd., an org. luminescence device using the metal coordination compd. and display app. using the device. The present invention relates to a metal coordination compd. having formula L_mM₁L'_n (M = Ir, Pt, Ph, Pd; L = bidentate ligand; L' = bidentate ligand different from L; m = 1, 2, 3; n = 0, 1, 2; n+m = 2 or 3) appearing after it as a luminescence material so as to allow stable luminescence efficiency. The present invention relates to an org. electroluminescence device having high responsiveness and high efficiency.

IT 433692-44-5

RL: TEM (Technical or engineered material use); USES (Uses)
(metal coordination compd. for luminescence device and display app.)

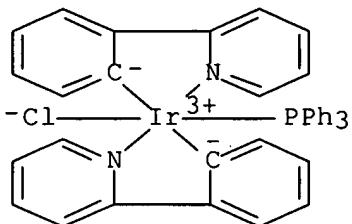
RN 433692-44-5 HCAPLUS

CN Iridium, bis[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C](8-quinolinolato-.kappa.N1,.kappa.O8)- (9CI) (CA INDEX NAME)

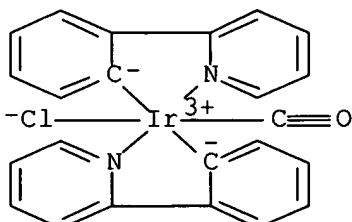


OK for
Clms 12113
but no fluorine

L109 ANSWER 18 OF 19 HCAPLUS COPYRIGHT ACS on STN
 AN 1985:495440 HCAPLUS
 DN 103:95440
 ED Entered STN: 22 Sep 1985
 TI Luminescence spectroscopy and oxidative quenching of orthometallated complexes of iridium(III)
 AU King, K. A.; Finlayson, M. F.; Spellane, P. J.; Watts, R. J.
 CS Quantum Inst., Univ. California, Santa Barbara, CA, 93106, USA
 SO Scientific Papers of the Institute of Physical and Chemical Research (Japan) (1984), 78(4), 97-106
 CODEN: SPIPAG; ISSN: 0020-3092
 DT Journal
 LA English
 CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 AB The excited states of several mononuclear orthometallated Ir(III) complexes of 2-phenylpyridine (ppy) and benzo[h]quinoline (bzq) were characterized by luminescence measurements. These complexes emit from metal-to-ligand charge-transfer (MLCT) or ligand-centered (LC) excited states, both in glasses at 77 K and in inert solvents at ambient temp. The degree of MLCT or LC character in their excited states can be controlled by adjusting the no. of Ir-C bonds and the nature of the other ligands in the metal coordination sphere. The ability of excited states of orthometallated species to act as strong reducing agents in photoredox processes is illustrated by quenching of the emission of fac-Ir(ppy)₃ by a variety of oxidative quenchers; these studies indicate an excited-state oxidn. potential of about +1.8 V for this species.
 IT 52352-02-0 92220-65-0 94928-86-6 97894-10-5 97894-11-6 97894-12-7 97894-13-8 97894-14-9
 RL: PRP (Properties)
 (luminescence and oxidative quenching of)
 RN 97894-11-6 HCAPLUS
 CN Iridium, chlorobis[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C](triphenylphosphine)- (9CI) (CA INDEX NAME)



OK for the
 Claim 15
 structure,
 except that
 there is
 no fluorine.



L161 ANSWER 23 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1981:149422 CAPLUS

DN 94:149422

TI 8-Oxyquinolate iridium(I) complexes and their oxidative-addition reactions

AU Uson, Rafael; Oro, Luis A.; Ciriano, Miguel A.; Gonzalez, Rafael

CS Dep. Inorg. Chem., Univ. Zaragoza, Zaragoza, Spain

SO Journal of Organometallic Chemistry (1981), 205(2), 259-71

CODEN: JORCAI; ISSN: 0022-328X

DT Journal

LA English

AB The novel 16-electron complex $[\text{IrQ}(\text{COD})]$ (HQ = 8-hydroxyquinoline; COD = 1,5-cyclooctadiene) adds monodentate phosphines, phosphites, or activated olefins irreversibly to give pentacoordinate $[\text{IrQ}(\text{COD})\text{L}]$ (L = PPh_3 , $\text{P}(\text{OPh})_3$, maleic anhydride, or tetracyanoethylene). Reaction of $[\text{IrQ}(\text{COD})]$ with some diphosphines leads to the substitution products $[\text{IrQ}(\text{diphos})]$ (diphos = 1,2-bis-(diphenylphosphino)ethane or cis-1,2-bis(diphenylphosphino)ethylene). CO displaces the COD group from the complexes giving either $[\text{IrQ}(\text{CO})_2]$ or $[\text{IrQ}(\text{CO})\text{L}]$, and the latter undergo oxidative addn. reactions with SnCl_4 , Me_3SiCl , Me_3SnCl , MeI , allyl bromide, PhCOCl , MeCOCl , Cl_2 , Br_2 , TlCl_3 , and HCl leading to novel Ir(III) complexes.

IT 76770-93-9P 76770-94-0P 76770-95-1P

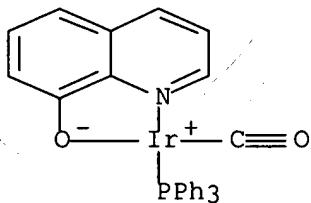
76821-69-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(prepn. and oxidative addn. reactions of)

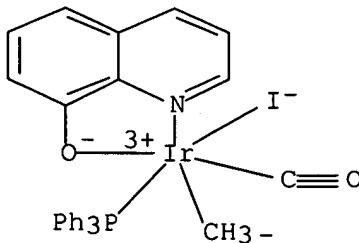
RN 76821-69-7 CAPLUS

CN Iridium, carbonyl(8-quinolinolato-N1,O8)(triphenylphosphine)-, (SP-4-3)-(9CI) (CA INDEX NAME)



RN 76770-97-3 CAPLUS

CN Iridium, carbonyliodomethyl(8-quinolinolato-N1,O8)(triphenylphosphine)- (9CI) (CA INDEX NAME)



L161 ANSWER 8 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1995:57590 CAPLUS

DN 122:150301

TI Chromatographic separation of platinum metals on silica modified with macrocyclic compounds

AU Szczepaniak, W.; Szymanski, A.

CS Faculty of Chemistry, A. Mickiewicz University, Poznan, 60-780, Pol.

SO Acta Chromatographica (1993), 2, 7-20

CODEN: ATCREU; ISSN: 1233-2356

DT Journal

LA English

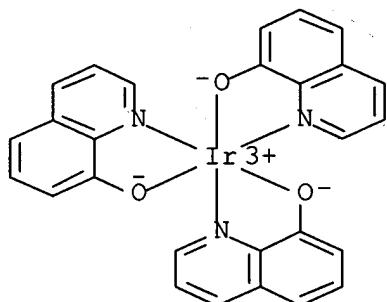
AB It is shown that new macrocyclic phases chem. bonded with silica can be used for chromatog. sepn. and identification of six Pt metal oxinates occurring in the form of chelates with 8-hydroxyquinoline. Sepn. characteristics of three macrocyclic packings are compared. Calibration curves of five Pt metal complexes are presented, and their range of linearity and also detection limit are detd. It is also indicated that for the chromatog. system applied, stationary phase-mobile phase, the sepd. chelate of metal cation is fairly complex, and therefore does not permit the unambiguous definition of sepn. mechanism, which is probably the result of many interactions involved.

IT 15671-12-2, Iridium(III) 8-hydroxyquinolate

RL: ANT (Analyte); PRP (Properties); ANST (Analytical study)
(chromatog. sepn. and identification of)

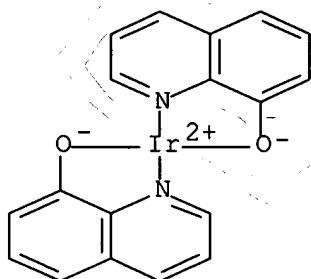
RN 15671-12-2 CAPLUS

CN Iridium, tris(8-quinolinolato-.kappa.N1,.kappa.O8)- (9CI) (CA INDEX NAME)



*Three of one of the
fragments
of claims
12, 13*

L161 ANSWER 20 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN
 AN 1984:182110 CAPLUS
 DN 100:182110
 TI Voltammetric behavior of tris(8-quinolinolato)iridium(III) complex in dimethylformamide
 AU Roffia, S.; Conciano, V.; Paradisi, C.; Ciano, M.
 CS Inst. Chim. "G. Ciamician", Univ. Bologna, Bologna, 40126, Italy
 SO Journal of Electroanalytical Chemistry and Interfacial Electrochemistry (1984), 161(2), 305-12
 CODEN: JEIEBC; ISSN: 0022-0728
 DT Journal
 LA English
 AB The polarog. and cyclic voltammetric behavior of $\text{Ir}(\text{QO})_3$ ($\text{QO}^- =$ 8-quinolinolato anion) was studied in DMF. In cyclic voltammetry, at sufficiently high sweep rates (nu.) the complex exhibits three 1-electron reversible redn. peaks. By decreasing v the 1st peak becomes irreversible and 2 other cathodic peaks appear. Concomitantly, the 2nd and 3rd peaks, obsd. at high v, disappear. The irreversibility of the 1st peak is attributed to a 1st order chem. reaction, involving the product of the 1st 1-electron transfer, and in which the formation of $\text{Ir}(\text{QO})_2$ and QO^- takes place. The 2nd and 3rd peaks obsd. at low v, are attributed, resp., to the redn. of $\text{Ir}(\text{QO})_2$ and QO^- formed in the 1st process. As to the polarog. behavior, the processes responsible for the 3 waves obsd. could be similar to those described for the 3 redn. peaks obsd. in cyclic voltammetry at low v. A qual. MO discussion of the character of the e mol. levels involved in the redn. process is also reported.
 IT 89885-11-0P
 RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (formation and electrochem. oxidn. of)
 RN 89885-11-0 CAPLUS
 CN Iridium, bis(8-quinolinolato-N1,O8)- (9CI) (CA INDEX NAME)



*Two of one
of the fragments
of claims 12, 13*